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Common Energy Myths

by Evan Mills

Following is a list of common myths about energy and energy savings. Sometimes the basic premise of the myth may be correct, but the energy savings are much smaller than people realize. In other cases, the myth may be based on factors that were once true but that have been subsequently resolved through better design or manufacturing of products. In all cases, the bottom line is that you should always think critically when you hear a "tip" on how to save energy—and dig a little deeper to separate the myths from the facts.

Myth: Buying an efficient air conditioner or furnace will automatically reduce my energy bill.

FACT: This is true to some extent, but you won't realize all the possible savings if the equipment is not sized or installed properly. Studies have shown that typical air conditioner and duct systems are improperly installed, wasting one-third or more of the energy used by the air conditioner. New and replacement equipment (and ducts) need to be properly designed and installed to realize all the possible savings. The same caveats about proper installation hold true for insulation, windows, and many other energy efficiency upgrades.



Myth: Energy efficiency and energy conservation are one and the same thing.

FACT: Well-intentioned information campaigns during the oil crises of the 1970s created a lot of confusion about how to save energy and even about how to talk about saving energy. Energy efficiency means getting the same job done while using less energy. This could be lighting a room, cooling a house, or refrigerating some vegetables. The things made possible by using energy—such as illumination, comfort, or food preservation—are sometimes called energy services.

Energy conservation, on the other hand, means reducing the level of services, such as reducing lighting or comfort, or turning up the temperature of your fridge. Reducing service levels (conservation) does not necessarily mean sacrifice, however. For example, many spaces are overlit by current-day standards, many water heater temperatures are set too high, and so on. Consumers have the option of improving energy efficiency (such as through purchasing better appliances) and/or reducing service levels, but lowering the quality of life is not a prerequisite for reducing energy demand.



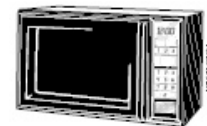
Myth: Duct tape is good for sealing ducts.

FACT: Unfortunately, laboratory research has concluded that duct tape has very low durability when used to seal ducts. On new installations, tape often falls off due to poor surface preparation, because ducts tend to be installed in dirty and dusty locations and conditions. On older systems, the tape falls off as it ages and the adhesive dries out and wrinkles. Instead of duct tape, seal ducts with mastic.



Myth: When my appliance is turned off, it's off.

FACT: We've found that most devices continue to consume power when they're switched off, sometimes as much power as when they're on! A surprisingly large number of electrical products—from air conditioners to VCRs—cannot be switched completely off without unplugging the device. These products draw power 24 hours a day, often without the knowledge of the consumer. We call this power consumption standby power. One easy remedy for this is to unplug appliances when you are out of the house—easily done if many items are grouped together on one power strip.



FACT: While this seems intuitively logical, and very small savings may indeed arise, efforts to actually measure this effect have typically come up empty-handed. Cleaning coils is probably a good idea, especially if you want to cut down on dust and dirt buildup in your kitchen, but don't expect lower utility bills from it.



Myth: Installing foam gaskets in electrical outlets will significantly reduce air leakage.

FACT: Measurements have shown that less than 1% of a home's air leakage is due to outlets. However, a lot of little holes add up to one big hole. If you're doing a thorough air sealing job, or you're in a very big house with a lot of light switches, it wouldn't hurt to install gaskets—but you might want to save this measure for last, in case you run out of time or energy.

Myth: Leaving lights, computers, and other appliances on uses less energy than turning them off and on repeatedly, and makes them last longer.

FACT: The small surge of power created when some devices are turned on is vastly smaller than the energy used by running the device when it's not needed. While it used to be the case that cycling appliances and lighting on and off significantly reduced their useful lifetimes, these problems have been largely overcome through better design. The rule of thumb today is: Turn off the lights when you leave the room, and use the power management software that comes with your computer and monitor.



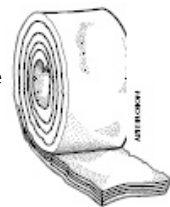
Myth: Energy efficiency increases the first cost of houses.

FACT: While efficient products usually cost more, in some cases there may be little or no added initial cost. Most efficient products are also premium products (in terms of features, warranty, and so on), so it's difficult to say that you are paying for the efficiency. In some instances, efficiency can even reduce first cost, as in the case where smaller, properly sized heating and cooling systems can be installed if they're highly efficient. When homes are designed well and include such measures as passive solar lighting and heating measures, optimum-value engineering, correctly sized HVAC systems, high-tech windows, and shorter duct runs, up-front building costs often turn out to be about the same as those of conventional homes, while operating costs are significantly lower. What's more, high-performance homes offer huge savings in terms of occupant comfort and safety, and reduced litigation and callbacks.



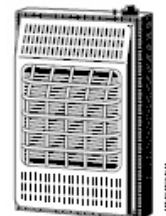
Myth: Insulating the ceiling will just cause more heat to leak out of the windows.

FACT: Adding insulation to one part of a home won't increase the "pressure" on heat losses through other parts. However, it is true that poorly insulated areas will be the major losers of heat, and that they often merit attention before improving already well-insulated parts of the home. To best insulate a home, large and small leaks must be addressed.



Myth: Switching to electric room heaters will reduce your energy bill.

FACT: This is true only under some circumstances. If you have central electric heating, using individual room heaters may save you money, if you run the heater only in the room that you occupy. But if you have central gas heating (which is typically cheaper per unit of useful heat), you can easily match or even exceed your heating bill by switching to electrical units.



Myth: Fluorescent lighting is unhealthy.

FACT: Fluorescent lighting has changed dramatically in the last few years. Today's fluorescents have greatly improved color quality. And the annoying flicker and hum have been eliminated from fluorescents.

that use electronic ballasts. The oft-cited claims of fluorescent lights “sapping people’s vitamins” and the like have no basis in fact. Because they require less electricity, fluorescents generate less power plant pollution, which has many known health effects. Fluorescent lights do contain small amounts of mercury and must be disposed of properly. However, additional mercury releases are avoided thanks to reduced use of mercury-containing fossil fuels used to generate electricity. If it’s been a while since you tried fluorescent lights, you might give them another chance.

Myth: Halogen lighting is superefficient.

FACT: It’s true that halogen lights use slightly less energy than standard incandescent bulbs, but many halogens require transformers that can use extra energy, even when the light is off. They also tend to put off a great deal of heat, which may add to the cooling load of a home during hot weather. Halogens can also pose a serious fire hazard. By comparison, compact fluorescent lights are nearly 3 times as efficient and put off far less heat. Many new models are dimmable, like halogens.

Myth: Electric heating is more efficient than fuel-based heating.

FACT: It’s true that all, or almost all, of the electricity that goes into an electric heater is transformed to useful heat in your home. However, making electricity is an inefficient process, with as much as two-thirds of the input energy (coal, natural gas, and so on) being lost in the process. This is why electricity is typically so much more expensive for the consumer than direct fuels. Don’t forget, though, that combustion appliances in the home must be installed and vented properly and must always have a continuous, reliable source of makeup air.



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